REMARKS

Claims 1-3 and 5-10 are pending in the application. Claim 4 was cancelled. Claims 1 and 7-10 were amended to more particularly point out and distinctly claim the inventions of claims 1 and 7-10. Support for the amendment to claims 1 and 7-10 can be found in at least the original claim 4 and paragraph [0062] of the specification. Claims 5 and 6 were amended to change the claim dependency from claim 4 to claim 2. Claim 9 was also amended to more particularly point out and distinctly claim the structure of the invention of claim 9. Support for the amendment to claim 9 can be found in at least paragraphs [0074] – [0076] of the specification. Therefore, no new matter has been added.

For at least the reasons set forth below, withdrawal of all outstanding rejections is respectfully requested.

Claim Rejections – 35 U.S.C. § 101

Claim 9 was rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Applicants respectfully traverse this rejection.

Claim 9 now reads, in part, as follows (underlining for emphasis only):

> A computer readable storage medium having stored thereon a computer program for use with an optical disc drive for tracking control purposes, the optical disc drive to be loaded with an optical disc that includes tracks on which a plurality of marks are formed

The highlighted limitation of claim 9 above distinctly embodies the invention of claim 9 in a computer readable medium. The computer program of claim 9 may be stored on various types of computer readable storage media such as optical disks, SD memory cards, EEPROM and flexible disks. See paragraphs [0074]-[0076] of the specification. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §101 rejection of claim 9.

Prior Art Rejections

Claims 1-10 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,808,979 (Ishibashi et al., hereafter "Ishibashi"). Applicant respectfully traverses these rejections. As stated above, claim 4 has been cancelled thereby rendering the rejection of claim 4 effectively moot. Applicants respectfully traverse the outstanding prior art based claim rejections.

1. Patentability of independent claims 1, 8, 9 and 10 over Ishibashi

Claim 1 now reads, in part, as follows (underlining added for emphasis):

> a first filter that receives the first read signal, attenuates a frequency component of the first read signal, and outputs a first processed signal, the first processed signal having the attenuated frequency component of the first read signal, the frequency component to be attenuated being determined by the minimum length of the marks which are formed on a track;
>
> a second filter that receives the second read signal, attenuates a frequency component of the second read signal, and outputs a second processed signal, the second processed signal having the attenuated frequency component of the second read signal, the frequency component to be attenuated being determined by the minimum length of the marks which are formed on a track

Claim 8 now reads, in part, as follows (underlining added for emphasis):

> receiving the first read signal, using a first filter to attenuate a frequency component of the first read signal, and outputting a first processed signal, the first processed signal having the attenuated frequency component of the first read signal, the frequency component to be attenuated being determined by the minimum length of the marks which are formed on a track;

receiving the second read signal, using a second filter to attenuate a frequency component of the second read signal, and outputting a second processed signal, the second processed signal having the attenuated frequency component of the second read signal, the frequency component to be attenuated being determined by the minimum length of the marks which are formed on a track

Claim 9 now reads, in part, as follows (underlining added for emphasis):

receiving the first read signal, attenuating a frequency component of the first read signal, and outputting a first processed signal, the first processed signal having the attenuated frequency component of the first read signal, the frequency component to be attenuated being determined by the minimum length of the marks which are formed on a track;

receiving the second read signal, attenuating a frequency component of the second read signal, and outputting a second processed signal, the second processed signal having the attenuated frequency component of the second read signal, the frequency component to be attenuated being determined by the minimum length of the marks which are formed on a track

Claim 10 now reads, in part, as follows (underlining added for emphasis):

a first filter that receives the first read signal, attenuates a frequency component of the first read signal, and outputs a first processed signal, the first processed signal having the attenuated frequency component of the first read signal, the frequency component to be attenuated being determined by the minimum length of the marks which are formed on a track;

a second filter that receives the second read signal, attenuates a frequency component of the second read signal, and outputs a second processed signal, the second processed signal having the attenuated frequency

> component of the second read signal, the frequency component to be attenuated being determined by the minimum length of the marks which are formed on a track

Embodiments of the present specification disclose devices and steps for generating a tracking control for an optical disk drive to be loaded with an optical disk that includes tracks and on which a plurality of marks are formed. As part of generating the tracking control, a phase shift between a first and a second processed signal is detected. The first and second processed signals are created by a first and second filter that receive a first read signal and a second read signal, respectively. The first and second filters respectively attenuate a frequency component of the first and second read signals. The frequency component to be attenuated in the first and second read signals is determined by the minimum length of the marks which are formed on a track of the optical disk. The first and second filters then respectively output the first and second processed signal. The first and second processed signals have the attenuated frequency component of the first and second read signals, respectively. By using these processed first and second signals, the phase shift is detected using only portions of the first and second read signals with large amplitudes thereby reducing potential phase detection errors. See Figures 3 and 9 and paragraphs [0071]-[0073] of the present specification.

On page 4 of the outstanding Office Action, the Examiner states that Ishibashi discloses:

> a first filter that receives the first read signal, attenuates a frequency component of the first read signal, and outputs a first processed signal, the first processed signal having the attenuated frequency component of the first read signal, the frequency component to be attenuated being determined by the lengths of the marks which are formed on a track; a second filter that receives the second read signal, attenuates a frequency component of the second read signal, and outputs a second processed signal, the second processed signal having the attenuated frequency component of the second read signal, the frequency component to be attenuated being determined by the lengths of the marks which are formed on a track (citing Figure 1 and column 5, line 62 to column 6, line 9 and lines 16-35 of Ishibashi).

On page 5 of the Office Action, the Examiner addresses the "minimum length" limitation of claim 4 by stating that it is met by the disclosure in column 5, line 62 through column 6, line 9 of Ishibashi regarding amplifying the short pit frequency.

Column 5, line 62 to column 6, line 9 and column 6, lines 16-35 of Ishibashi reads as follows (emphasis added):

> For example, when a short pit occurs between long pits, as shown in FIG. 12A, the signal S2 or S3 from the high pass filter 4a or 4b, respectively, may not show a sufficient amplitude in waves representing the short pit, as shown by the solid lines in FIGS. 12B and 12C. Thus, in order to detect such a weak wave representing the short pit with the predetermined threshold TH in the digitizing unit 7a or 7b, it is necessary to *increase the amplitude* of the weak wave. The boost filter 5a or 5b is provided for this purpose. It is noted that the frequency of the signal S2 or S3 at a portion corresponding to the long pit is relatively low, and that the frequency at a portion corresponding to the short pit is relatively high. Thus, by using the boost filter, it is possible to *amplify* only the wave corresponding to the short pit.
>
> However, according to the present invention, by using the low order boost filters 5a and 5b with exactly the same phase shift characteristics, it is possible to realize boost filters of high boosting capacity without any problem although such low order filters accompany phase shifts. In the present invention, however, since the signals S2 and S3 experience the same amount of phase shift φ (FIGS. 12B and 12C) and since S2 and S3 are compared to each other in the later stage 8a, the phase shift φ is cancelled. The boost filter 5a *amplifies* the weak signal S2 to S2', and the boost filter 5b *amplifies* the weak signal S3 to S3'. The signals S2' and S3' are changed to binary forms Pa and Pb (FIG. 12D), respectively, in digitizing unit 7a, and the phase difference therebetween is obtained from the phase comparator 8. So when the signals S2' and S3', obtained from boost filters 5a and 5b, are changed to binary format and compared, the phase difference therebetween represents only the tracking error as detected by the photodetector 1. Note that the width of the pulses shown in FIG. 12E represents the amount of the tracking error from the center of the track.

Nothing in the cited text or elsewhere in Ishibashi discloses or suggests the limitations recited in claims 1, 8, 9 and 10 that the first and second filters respectively attenuate a frequency component of the first and second read signals or that the frequency component to be attenuated

in the first and second read signals is determined by the minimum length of the marks which are formed on a track of the optical disk. To the contrary, Ishibashi discloses that the boost filter amplifies the weak wave corresponding to the short pit. Amplification is the complete opposite of attenuation. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejections of claims 1, 8, 9 and 10.

2. Patentability of the dependent claims over Ishibashi

Dependent claims 2-7 are believed to be patentable over Ishibashi for at least the reason that they depend from a patentable base claim and that they recite further patentable elements. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §102(b) rejections of claims 2-7.

Conclusion

Insofar as the Examiner's rejections were fully addressed, the instant application including all pending claims is in condition for allowance. A Notice of Allowability of all pending claims is therefore earnestly solicited.

Respectfully submitted,

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Sept. 17, 2007
(Date)

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